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ABSTRACT

5 The present invention includes a catalyst structure and method of making the catalyst structure for Fischer-Tropsch synthesis that both rely upon the catalyst structure having a first porous structure with a first pore surface area and a first pore size of at least about 0.1 μm , preferably from about 10 μm to about 300 μm . A porous interfacial layer with a second pore surface area and a second pore
10 size less than the first pore size is placed upon the first pore surface area. Finally, a Fischer-Tropsch catalyst selected from the group consisting of cobalt, ruthenium, iron and combinations thereof is placed upon the second pore surface area. Further improvement is achieved by using a microchannel reactor wherein the reaction chamber walls define a microchannel with the catalyst structure
15 placed therein through which pass reactants. The walls may separate the reaction chamber from at least one cooling chamber. The present invention also includes a method of Fischer-Tropsch synthesis.